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Revised April 1958

U. S. DEPARTMENT OF AGRICULTURE

INFORMATION FOR APPLICANTS FOR FEDERAL MEAT INSPECTION
AND OWNERS AND OPERATORS OF OFFICIAL ESTABLISHMENTS

PROCESSING PLANTS (NO SLAUGHTERING)

Federal meat inspection is administered by the Meat Inspection Division of the Agricultural Research Service. The administrative offices are in Washington, D. C.

The purpose of the Federal Meat Inspection Act approved March 4, 1907, is stated in the Act as:

" . . . for the purpose of preventing the use in interstate or foreign commerce . . . of meat and meat food products which are unsound, unhealthful, unwholesome, or otherwise unfit for human food"

The Act is intended to assure a healthful and wholesome meat supply in interstate and foreign commerce. The inspection maintained at a plant covers the entire production of the plant regardless of the proportion shipped in interstate or foreign trade.

The Act of 1907 applies only to cattle (including calves), sheep, swine, and goats, and the edible products derived from their carcasses. Its provisions are, however, extended to horses by the Horse-Meat Act approved July 24, 1919. The preparation, processing, and handling of horse meat must be conducted in establishments wholly separate and apart from those preparing products derived from cattle, sheep, swine, and goats. Wild animals, fish, and game are not subject to its provisions. Food products derived from such species are subject to State laws and local ordinances, and, if shipped in interstate or foreign commerce, are subject also to the provisions of the Food, Drug and Cosmetic Act, administered by the Food and Drug Administration of the U. S. Department of Health, Education and Welfare. Dressed poultry and poultry products are subject, effective January 1, 1959, to the provisions of the Poultry Products Act of August 28, 1957, if offered for sale in interstate or foreign commerce or to designated major consuming areas. The mandatory Poultry Inspection program will be available about May 1, 1958, to processors electing to utilize the Service before the compulsory deadline.

The cost of Federal meat inspection is paid by the Government insofar as the salaries of inspectors for services during regular hours are concerned. However, the packer is required to compensate the Government for the cost of overtime inspection. The cost of preparing, equipping, and maintaining the plant in condition to meet inspection requirements, and losses resulting from condemnation of product must be borne by the owner or operator of the plant.

Under certain specific provisions of the Meat Inspection Act, retail meat dealers and farmers may make interstate shipments of meats or meat food products without operating under Federal inspection; however, the Secretary of Agriculture may, at his discretion, require that such persons apply and qualify for the inspection. The term "farmer", insofar as Federal meat inspection is concerned, is defined in the Act.

The owner or operator of any meat processing plant who contemplates engaging in interstate or foreign trade in meat or products derived from cattle (including calves), sheep, swine, or goats, or furnishing such products to Federal agencies, should address the Director, Meat Inspection Division, Agricultural Research Service, U. S. Department of Agriculture, Washington 25, D. C., and furnish detailed information relative to the nature and volume of the proposed operations. In reply, he will be informed whether the proposed business requires or entitles him to Federal inspection and, if so, he will be furnished a form upon which he may make a formal application therefor. With such application he will be required to furnish plans and specifications of the proposed plant, as hereinafter indicated. Pending the receipt of information concerning the eligibility of the plant for the inspection, including the approval of plans and specifications, it is highly important that the applicant refrain from acquiring property, or undertaking construction, or remodeling for the contemplated operations, as failure to observe this suggestion may result in unnecessary expense and inconvenience.

Drawings to Accompany Application for Inspection

Blueprints of drawings with specifications, in triplicate, fully and clearly illustrating the applicant's plant as he proposes to have it constructed and equipped for the inspection should be submitted to the Meat Inspection Division at Washington, D. C., with the application for inspection. Blueprint drawings are preferred since they are later converted onto microfilm records and most suitable for this purpose. The drawings should include the following:

- (a) Plot plan of the entire premises showing location of all buildings, roadways, railroad trackage, streets and alleys adjoining the plant, streams, catch basins, water wells, reservoirs, and storage tanks. If nearby buildings exist on adjoining property, their height and use should be indicated. The character and surfacing of roadways, driveways, streets, and the paving of vehicular loading areas, and alleys should be indicated.
- (b) Floor plans of each level in the various buildings showing the location of walls, partitions, posts, doorways, windows, and other openings; floor drainage inlets and gutters; rail systems for conveying carcasses, parts and product; chutes; location of the principal pieces of equipment; hot and cold water hose

connections; and hand-washing facilities (lavatories). The slope of floors to drainage facilities should be indicated by grade lines. The location of sectional lines should be shown on the floor plans. For convenient reference, it is desired that the north point be shown on the floor plans as well as on the plot plan.

- (c) Cross sections and longitudinal sections of the various buildings showing the character and finish of floors, walls, partitions, and ceilings; heights of ceilings; the principal pieces of equipment; and rails.
- (d) Exterior elevations on each side of each building showing locations and sizes of doors, windows and other openings.
- (e) Roof plan showing skylights, vents, and other pertinent information.
- (f) Specifications or notations (see Pages 14-19) covering features such as source of water supply; method of sewage disposal; description of the trapping and venting of drainage lines; description of hot water system; means to dispel steam and vapor in workrooms; and screens for outer openings that would admit flies. Notations applying to the project should be typewritten and placed on separate sheets 8" x 10 $\frac{1}{2}$ " and attached to the set of drawings, the revised sheet, or the copy sheet with attached paster drawings as the case may be.

Size. The size of drawings illustrating the layouts should be on sheets not larger than 30" x 42". If the size of the project is such that all pertinent information cannot be fully detailed on one sheet, two or more sheets should be used. The "cut-off" in such cases must be adequately identified with match lines with a sufficient overlap shown on each sheet to facilitate proper interpretation of the drawings.

Legibility. Legibility and sharp clear lines on the drawings are essential since the Washington files are maintained in the form of microfilm records only and satisfactory film cannot be obtained from hazy drawings or those with insufficient contrast between the lines and the blueprint background of uniform density.

Scale. The use of the 1/4-inch to a foot scale is preferable in preparing drawings of layouts on the 30" x 42" sheets presented for consideration. No objections will be interposed to the use of the 1/8-inch to a foot scale if in the development of the layout it is found that its use is advantageous for the over-all illustration of the project and that it would tend to minimize the number of sheets required for the set of the

blueprints; provided, that layouts of such principal departments as canning, boning, sausage, employee welfare rooms, and the like where considerable equipment or operations are involved shall be detailed on a separate sheet at the 1/4-inch scale with a proper notation placed on the 1/8-inch scale drawings. Over-all floor plans and plot plans may be developed on a smaller scale if necessary to confine them to sheets no larger than 30" x 42".

Changes. The Washington office discards the original approved drawings after microfilming. Accordingly, when changes are proposed in areas for which drawings have been previously approved and converted onto microfilm records, one of the following types of revised drawings should be submitted for review and consideration:

- (1) A completely revised sheet or sheets showing the existing construction and equipment which will remain unchanged, together with the proposed alterations and/or additions (preferable method) or
- (2) A copy of the previously approved sheet or sheets with previously approved pasters affecting the area and pasters of the proposed changes superimposed and securely affixed to the affected areas in a manner not obscuring essential data.

Paster drawings should be prepared to the same scale and presented on a background similar to that of the originally approved drawings to facilitate microfilming operations. When paster drawings are of a different background than the originally approved drawings, there is difficulty in obtaining proper recording on microfilm.

Projects for expansion or remodeling often realign operations or activities in existing areas or additions to the extent that previously approved over-all floor layouts are misleading for use in reviewing the sequence of operations and for evaluation of inspectional requirements. In these instances, it is desired that revised over-all floor layouts illustrating existing facilities, as well as the proposed changes, be made part of the expansion or remodeling projects. If necessary, a smaller scale than 1/8-inch per foot may be employed to develop such over-all floor layouts to confine them on sheets no larger than 30" x 42".

Space for Approval Stamp. It is necessary that a contrasting space (white) at least 1 3/4" x 2 1/2" in size be provided on whole sheets of blueprints for the placement of the formal mark of approval. A similar space can be affixed to paster blueprints provided the arrangement will not obliterate any features shown on the whole sheet. Otherwise, the formal mark of approval will be affixed to the reverse side of the paster drawings.

If the examination of the drawings and specifications shows that they meet the requirements, the formal mark of approval is placed on them and an approved set is returned to the applicant. The other two sets are retained for reference.

Because of the specialized knowledge required to design and construct a well arranged meat packing plant, a competent architect or engineer experienced in laying out plants for operation under Federal meat inspection should be employed to prepare the drawings and specifications. Construction should be deferred until the drawings and specifications have been approved by the Meat Inspection Division.

Location of Establishments

Features of primary importance in connection with the location of a processing plant operated under Federal meat inspection are:

Water Supply. Must be ample, potable (passing the tests prescribed for potability in the "Drinking Water Standards" promulgated by the U. S. Public Health Service, Department of Health, Education and Welfare, dated February 6, 1946, or any subsequent revision), and distributed throughout the plant under adequate pressure and in quantities sufficient for all operating needs. Both hot and cold water should be provided, the hot water from a central heating plant of sufficient capacity or from other suitable facilities capable of furnishing an ample supply of hot water. Water from public water supply systems is usually, but not invariably, acceptable. If the water is supplied from private wells, the wells should be upon the premises of the establishment and effectively protected from pollution. A non-potable water supply is a potential source of danger. If such a supply is necessary for fire protection or for the condensers of the refrigerating system, it should be kept separate from the potable supply. If a cross-connection between the two supplies is necessary, it should be one that will adequately safeguard the potable supply, and be acceptable to the Meat Inspection Division and local health authorities. Non-potable water lines within buildings in which edible products departments are located should be avoided. Vacuum breakers of an acceptable type should be provided on all steam lines and water lines connected to various pieces of equipment. If chlorinators are required to assure a continuous potable supply, they should be of the automatic type and provided with devices that inform the plant management and inspector when they have ceased to function.

Sewage Disposal. May be into a municipal sewer system and if this is permitted by local ordinance, it is most desirable. If the discharge is into a stream, the flow of water therein must be sufficient at all seasons of the year to carry the sewage well away from the plant and the method of disposal acceptable to local health authorities having jurisdiction over such matters. A letter from the proper health authority (state, county, city) indicating proposed sewage system is

acceptable should be submitted to the inspector in charge before requesting a final survey of the plant before inauguration of inspection.

Expansion. In planning a plant, due consideration should be given to providing space and an arrangement of buildings that will permit future expansion. To this end, coolers, freezers, processing departments, etc., should be so located that they may be enlarged without adversely affecting other departments. Features such as the inedible products departments and catch basins for grease recovery should be suitably located in the rear of the plant so as to avoid objectionable conditions affecting the preparation and handling of edible products.

Separation. An establishment operating under Federal meat inspection must be completely separated from any other plant and buildings, whether used for industrial, commercial, residential, or other purposes. No communications by means of doorways, windows, stairways, elevators, or passageways, loading or unloading platforms, or loading courts are permissible.

If a retail meat business is carried on within the official premises of the establishment, it shall be so arranged that customers shall have access only to the room or rooms where such business is conducted and shall be excluded from the remainder of the establishment. All meat and meat food product handled in the retail business shall be U. S. inspected and passed and so identified when brought into the market.

Construction

Floors, Walls, and Ceilings. To promote good sanitation, the floors, walls, and ceilings in the various workrooms should be constructed of impervious material that can be readily kept clean. Wood structures and equipment are absorbent and difficult to keep clean, and for that reason the use of wood should be restricted as much as possible. (In lieu of dressed and matched lumber, the use of marine plywood or cement asbestos board, which are available in large sheets, is preferable as there are fewer joints that offer a harbor for roaches or other vermin.) Floors requiring drainage should be constructed of impervious material, such as dense concrete or vitrified floor brick of good quality laid on a concrete base. Interior wall and, so far as structural considerations permit, ceiling surfaces should be smooth and flat. Wall surfaces in workrooms should be constructed of glazed brick, glazed tile, smooth Portland cement plaster, or other non-absorbent material. Ceilings should be of good height (about 10 feet or more), and to avoid damage to glass in windows from impact of hand trucks, the window sills should be 3 feet or more above the floor. Window sills should be sloped about 45 degrees to promote sanitation.

Floors and Drainage. All parts of floors where wet operations are conducted should be well drained. A slope of about 1/4-inch a foot to drainage inlets is desirable for usual conditions. To avoid accidents, excessively smooth floors should be avoided. Good results have been

obtained by laying concrete floors with a topping containing hard particles, such as carborundum, so as to afford a good foothold, or by giving them a wood float finish. Each floor drain should be equipped with a deep seal trap (P-, U-, or S-shape). The drainage lines should be of metal (cast or galvanized iron pipe) having an inside diameter of at least 4 inches, provided with rodent screens and properly vented to the outside air. Where several 4-inch lines discharge into one drainage line, this line should be of sufficient size to quickly carry away all drainage discharged into it. Drainage lines from toilet bowls and urinals should not be connected with other drainage lines within the building and should not discharge into a grease catch basin. Such lines should be located so that if leakage develops it will not affect product or equipment. Where there is likelihood that the water seals in traps will evaporate without replenishment from floor drainage, as in the case of dry storage rooms and freezers, the floor drains should be provided with suitable removable metal screw plugs.

Lighting. Unrefrigerated workrooms should be provided with means for furnishing adequate direct natural light and ventilation or an effective method for furnishing an ample volume of light and ventilation by mechanical means. Uncolored glass having a high transmissibility of light should be used in windows and skylights, and the glass area should approximate one-fourth of the floor area of a workroom. This ratio should be increased where there are obstructions, such as adjacent buildings, which interfere with the admittance of direct natural light. Well distributed artificial lighting of good quality is required at all places where, or at times when adequate natural light is not available or sufficient. The over-all intensity of artificial illumination should be not less than 20 foot candles. At all places where inspections are made or where special illumination is required to enable establishment employees to properly prepare products of any character to meet the requirements of the inspection, the illumination should be not less than 50 foot candles. To reduce glare, light diffusing and heat absorbing glass (blue) may be used in skylights and windows that are subjected to considerable sunshine.

Ventilation. Adequate means for ventilation should be provided in workrooms and welfare rooms. This may be furnished by means of ventilating-type windows and/or skylights or by mechanical means such as a fan and duct system. In locations subject to the presence of dust and objectionable odors, windows should be of the fixed type. In refrigerated workrooms where a considerable number of operatives are continuously employed, as in large cutting and boning rooms and bacon slicing rooms, where natural ventilation is limited, a reasonable amount of mechanical ventilation with fresh air should be continuously supplied to prevent stagnation of air.

Fresh air intakes for workrooms and welfare rooms should be so located that the air is not contaminated with odors, dust, smoke, etc., and the intakes provided with effective filters to eliminate insects, dust, etc., and where indicated, a heating element for tempering the air in cold

weather. Mechanical ventilating systems for non-refrigerated work areas and welfare rooms depending entirely on artificial means of ventilation should have ample capacity to produce at least six complete air changes hourly.

Equipment

- (1) Equipment should be constructed so that it can be readily kept clean. Excepting equipment such as cutting boards, metal equipment should be provided. Rust-resistant metal such as 18-8 stainless steel is recommended for equipment such as meat mixers; sausage stuffers; silent cutters; curing boxes and vats; tops of sausage stuffing, boning and other tables; bacon combs; the hooks of trolleys; tracks; track hangers; and storage racks for meat and meat food products, etc.
- (2) Sheet metal coverings on tops of wood tables; the inner surfaces of wooden meat handling trucks, curing and cooking containers; and concrete curing vats have been found unsatisfactory from the standpoint of sanitary maintenance and are not acceptable. However, when specified and approved, rust-resisting metal, such as stainless steel, may be used for covering cooler doors and door jambs. When such coverings are installed, they are to be securely affixed to the doors and/or jambs and where joints are necessary for proper installation, they shall be welded, soldered, or otherwise effectively sealed. The juncture of the metal coverings on jambs and walls are to be sealed with a flexible type sealing compound.
- (3) Equipment wasting water, such as soaking and cooking vats, sausage stuffing tables, can sterilizers, etc., should be installed so that waste water is delivered through an interrupted connection into the drainage system without flowing over the floor. Soaking and cooking vats should be provided with overflow pipes at least two inches in diameter. The upper end of each overflow pipe should be equipped with an open-end cleanout tee to facilitate cleaning. Stationary equipment and equipment not readily movable should be placed at least 12 inches from floors, walls, posts, and other fixed parts of the building and from other equipment to facilitate ready cleaning of outer surfaces. Vent stacks from covered cooking vats and hoods over cook tanks should be so arranged or constructed as will preclude drainage of condensate back into the vats.
- (4) A separate washroom or area should be provided for cleaning curing vats, hand trucks, utensils and containers such as boxes and trays. The room or area should have adequate direct natural light and ventilation, impervious well drained floor, impervious walls and ceiling, and an exhaust fan for dispelling steam vapors.
- (5) Conveniently located hand-washing facilities (lavatories) with a minimum bowl size of 16" x 16" x 9" should be provided for the use

of employees and inspectors. Each lavatory should be supplied with hot and cold running water delivered through a combination mixing faucet with outlet about 12 inches above the rim of the bowl to facilitate washing arms as well as hands; liquid soap and an ample supply of sanitary towels in suitable dispensers; and a suitable receptacle for used towels. Lavatories in workrooms and toilet rooms should be pedal operated. Sterilizers should be constructed of rust-resistant metal, of sufficient size for complete immersion of knives, cleavers, saws, and other implements in scalding hot water and provided adjoining the lavatories in boning and cutting departments as required. Each sterilizing receptacle should be provided with a water line, a steam line or other means of heating, an overflow and facilities for completely emptying the receptacle. One lavatory should be provided for every two sausage stuffing tables and so located as to be convenient to the stuffer operators. Lavatories should be directly connected to the drainage system.

- (6) Sanitary drinking fountains for the use of employees should be provided in large workrooms and in dressing rooms. If desired, they may be located at lavatories and so arranged that the overflows discharge into the bowls of the lavatories. If so located, they should be placed sufficiently high above the bowls to avoid splash onto them when the lavatories are used.
- (7) The locations of lavatories, lavatory-sterilizers, drinking fountains, and other similar features should be shown on the drawings.
- (8) Adequate and conveniently located hose connections for cleanup purposes should be provided throughout the plant. The use of long hoses should be avoided.

Other Requirements

- (1) The cooler facilities should have ample capacity for the volume of product to be handled. Cooler rails should be spaced at least 2 feet from refrigerating equipment, walls, columns, and other fixed parts of the building. To promote cleanliness of product and to protect walls from damage by carcass shanks, it is desirable to place rails (especially header or traffic rails) at least 3' 0" from the wall. The type of refrigeration should be indicated and, if wall coils are installed, a drip gutter of concrete or other impervious material integral with the floor and properly connected with the drainage system should be provided beneath the coils. If overhead refrigerating facilities are installed, insulated drip pans properly connected to the drainage system should be placed beneath them. Floor-type refrigerating units should be placed within curbed and separately drained areas unless located adjacent to floor drains. Walls of coolers should be of impervious material and of such construction that they will not be damaged by the impact of hand trucks. The tops of cooler rails above the highest part of the floor should be at least 11 feet for halves of beef, 9 feet for

hog carcasses with heads removed and calves (trolleys 12 inches long), and 7' 2" for quarters of beef. Sheep carcasses should be suspended so that the hooks or gambrels are at least 6' 6" above the floor.

- (2) A suitable compartment should be provided in a cooler for holding retained products. The compartment may be separated from the remainder of the cooler by partitions of rust-resistant wire screen, number 9 gauge, one-inch mesh, or flat expanded metal of approximate gauge and mesh, extending from about 2 inches above the floor to the ceiling. The compartment should have a door of similar material at least 4 feet wide, equipped for sealing or locking with a M. I. D. padlock.
- (3) Establishments carrying on operations using a large volume of packaging and labeling material, such as bacon slicing, luncheon meat slicing and prepackaging, sandwich steak preparation, etc., should provide adequate dry storage space for holding such supplies in a location or locations convenient to the department where used, preferably immediately adjacent.
- (4) Doorways through which product is transferred on rails or in hand trucks should be at least 5' 0" wide, except when such doors are used in connection with rails approximately 11' 0" high, doors at least 4' 6" wide will be acceptable. Such doors should be of rust-resistant metal construction throughout, or if wooden doors are used, they should be clad on both sides with rust-resistant metal having tight soldered or welded seams. Door jambs should be clad with rust-resistant metal securely affixed so as to provide no crevices for dirt or vermin and the juncture at the walls effectively sealed with a flexible sealing compound.
- (5) Truckways should be unobstructed passageways having a minimum width of 5' 0" and no overhead storage rails. When truckways are in coolers having overhead rails, along a wall or adjacent boning tables, a horizontal distance of 7' 0" should be provided between the wall or table and the vertical of the nearest rail. Truckways should be clearly designated on the drawings.
- (6) Stairs should be of concrete or metal with solid treads and closed risers and have side curbs of similar material 6 inches in height measured at the front edge of the tread.
- (7) It is required that product labeled "frozen" be frozen in the establishment where prepared. Suitable freezing facilities should, therefore, be provided in all establishments contemplating the preparation of "frozen foods".
- (8) Working surfaces of tables and other equipment should be not more than 34 inches above the floor where employees stand on the floor to conduct operations. Tables and equipment having higher working

surfaces should be provided with suitable metal foot platforms or attached metal platforms for employees to stand on.

- (9) All tables or other equipment having water on the working surface should be provided with turned up edges. The height of the turned up edge depends on the volume of water used and operations conducted. In no instance should the turn up be less than one inch.
- (10) Beef boning and trimming; pork cutting; sausage chopping and mixing; and similar operations should be conducted in departments having a temperature not higher than 50°F. Such operations should be conducted in rooms separate from carcass or product holding coolers to avoid contamination of product by cleanup water or condensation during the cleanup time.
- (11) Bacon slicing, chip steak packing, and similar operations should be conducted in departments having a temperature not higher than 60°F.
- (12) An incubation room for incubating samples of fully processed canned meat product should be provided in a suitable location in all plants where regular canning operations are conducted. The room should be of adequate size for holding not less than one percent of fully processed canned product from each run of each retort for at least 10 days. The temperature in the room should be maintained by thermostatic control at approximately 98°F. and the room provided with a 7 day recording thermometer mounted on the outside wall of the room. The sensitive elements of the thermostat and recording thermometer should be below the bottom shelf. The shelves should be made of expanded metal or heavy gauge (9) wire mesh and so installed as to be removable for cleaning. The floor in the room should be pitched to a floor drain equipped with a removable metal screw plug. The door of the room should be equipped for locking with a M. I. D. padlock.
- (13) Concrete paved areas, properly drained and extending out at least 20 feet from buildings, loading docks, and platforms should be provided at places where vehicles are loaded or unloaded.
- (14) Railroad track gutters with suitable drainage should be provided where refrigerated railroad cars are loaded and unloaded. The top of the gutter should be below the bottom of the railroad ties unless the entire track area is paved. This feature should be clearly illustrated on the drawings by a typical cross section of the gutter.
- (15) Tags which change color when heated should be provided in plants conducting canning operations for attachment to retort baskets containing canned product prior to processing.
- (16) An inedible products room having impervious floor, walls, and ceiling, adequate floor drainage, hot and cold water hose connections,

and direct natural lighting and ventilation should be provided for holding condemned and inedible material in water-tight metal containers pending its removal from the plant.

- (17) Every practicable precaution should be taken to keep official establishments free of flies, rats, mice, and other vermin. Ratproof construction is recommended as an effective means of preventing infestation. Control of roaches is in a large degree dependent upon structural conditions. Therefore, types of construction which do not offer hiding places and harbors for vermin are highly desirable.
- (18) Catch basins for the recovery of grease should be suitably located and not placed near edible products departments or areas where edible products are unloaded from or loaded onto vehicles. To facilitate ready cleaning, such basins should have inclined bottoms and should be without covers. They should be constructed so that they can be completely emptied of their contents for cleaning, and hose connections for furnishing hot water for cleanup purposes should be provided at convenient locations near the basins. The area surrounding an outside catch basin should be paved with impervious material such as concrete, and provided with suitable drainage facilities. Suitable facilities, such as a blow tank, for the transfer of grease to the point of disposal, after it is skimmed from the basins, should be provided.

Welfare Rooms. (1) Well located and properly separated toilet and dressing room facilities are required for employees of each sex. The number of employees using each dressing room should be given on the drawings. Each employee should be provided with a metal locker at least 15" x 18" x 60". To permit ready cleaning beneath the lockers, they should be raised about 16 inches above the floor on legs or other suitable supports. The lockers should have sloping tops. To maintain orderliness and to permit ready cleaning of the floor beneath the lockers, it is desirable to provide a plastic or wood plank seat about 12 inches wide in front of and below the doors of the lockers. This seat should be mounted on an extension of the framework supporting the lockers. The aisle width between the removable wood seats should be about 5 feet. If a seat not attached to the lockers is preferred, it should be in the form of a wood or plastic seat securely fastened to the floor by means of a minimum number of pipe leg supports. When centrally located seats of this type are used, the lockers should be spaced with at least 6' 0" aisles.

(2) Dressing rooms must be separated from adjoining toilet rooms by tight, full-height walls or partitions. A toilet room should not be entered directly from a workroom, but through an intervening dressing room or ventilated toilet room vestibule. Toilet rooms, dressing rooms, and toilet room vestibules should have solid, self-closing doors completely filling the doorway openings. Water closets should be provided in sufficient number for the employees using them (at least one unit for 25 men or 20 women). It should be shown in the specifications if more than one shift of employees working in the plant are using the dressing rooms and toilet facilities. Toilet stalls should preferably

be at least 5' 0" x 3' 0" in size and in no case less than 4' 0" x 2' 6". A sufficient number of modern type hand-washing basins (lavatories) are required in welfare rooms. The floors of toilet rooms and dressing rooms should be of impervious material and pitched about 1/8-inch per foot to properly located floor drainage facilities. If stall-type urinals are installed, a step-up of concrete or other impervious material surfaced with ceramic or glazed tile, sloped to drain into the urinal should be provided. If the urinals are of the wall-type, floor drains should be provided immediately beneath such fixtures. Inside toilet rooms should be provided with an entrance door from the locker room having a grilled area in the lower section. The toilet room should then be provided with an exhaust fan and duct to the outside air. The exhaust fan and the artificial lighting in the area should be activated by a common switch.

(3) To preclude insanitary conditions usually associated with employees eating lunches in edible processing departments, adequate lunching facilities consisting of tables and chairs (or benches), a lavatory and drinking fountain should be provided for plant employees where plant cafeterias or nearby eating places are not available.

Inspector's Office. A well located inspector's office at least 7' 0" x 9' 0" is required at each official establishment. The office should be located so that it is not entered through a company office or employees' welfare facilities, and it should be supplied with suitable furniture, including a desk and chairs, a metal clothing locker for each Government employee, a metal cabinet equipped for locking for the storage of supplies, and lavatory facilities. Shower bath facilities, while desirable, are not required in the inspector's quarters at establishments where only processing operations are conducted. Adequate separate toilet room and dressing room facilities should be provided in the inspector's quarters at establishments of such size that the assignment of several inspectors is required.

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The foregoing covers some of the principal construction and equipment requirements of the Federal meat inspection service. This information is subject to change as found necessary, due to developments in methods, equipment, etc. Widely varying conditions are met in designing meat packing plants and, therefore, it is not practicable to furnish complete information for owners, architect, and engineers. If further information is desired, please communicate with the Washington office of the Meat Inspection Division.

SUGGESTED NOTATIONS OR SPECIFICATIONS TO ACCOMPANY DRAWINGS
OF PROCESSING PLANTS COVERING DESIRED FEATURES
SOME OF WHICH SHOULD BE ALSO SHOWN ON THE DRAWINGS
(Subject to Variations Because of Differences in Projects)

BUILDING CONSTRUCTION

1. Portland cement plaster is used wherever the words "Cement Plaster" or the letters "P. C." appear on the drawings.
2. All walls are surfaced with an impervious material as indicated on the drawings for each room or area.
3. All floors having drainage facilities are of brick or concrete and sloped about 1/4-inch per foot to floor drains. Floors where operations are conducted have a non-slip surface.
4. Ceilings are smooth and flat and have a smooth, impervious surface as indicated on the drawings for each room or area. If there are exposed joists or rafters in the ceilings, they are of dressed lumber or rust-resistant metal and are spaced 36 inches c. to c. or more.
5. Dressed lumber is used for all exposed interior woodwork.
6. All exposed wood surfaces are painted with a good grade of oil paint or treated with hot linseed oil or a clear wood sealer.
7. All window and door openings and other openings that would admit flies are provided with effective insect screens. Also, effective means are provided to preclude rodents from entering buildings.
8. Glass in windows and skylights has a high transmissibility of light. Effective measures, such as the use of heat absorbing glass, glass block, or monitors and sawtooth skylights with sash facing north are taken to avoid objectionable heat and glare from the sun's rays during the summer season in workrooms.
9. Rails are placed not less than 2 feet from walls, posts, and other fixed parts of the building.
10. A compartment constructed of rust-resistant number 9 gauge wire screen, one-inch mesh, or expanded metal of approximate gauge, extending from about 2 inches above the floor to the ceiling is provided as indicated on the drawings. The compartment is for holding retained product. The door of this compartment is of similar material and is equipped for locking or sealing.
11. All doors of toilet rooms and dressing rooms and toilet room vestibules are solid, self-closing, and completely fill the openings, except as otherwise shown on the drawings.
12. All inside window ledges are sloped about 45°.

13. Doorways through which products are transferred on rails or in hand trucks are at least 5 feet wide, or in the case of doorways through which 11' 0" or higher rails pass, at least 4' 6" wide.
14. Doors are of rust-resistant metal, or in case of cooler doors of wood construction, they are clad on both sides with heavy rust-resistant metal and any seams are soldered or welded. The juncture of metal clad door jams and the walls are effectively sealed with a flexible sealing compound.
15. Glass blocks used in wall panels, etc., have smooth exposed surfaces.
16. Suitable coves to facilitate sanitary maintenance are provided at junctions between walls and floors.
17. Stairs are of impervious material having solid treads, closed risers, and side curbs 6 inches high measured at the front edge of the step.
18. Floor openings for chutes, etc., and for stairways, except at entrances, have curbs of impervious material, such as concrete or metal, at least 12 inches high to exclude floor drainage.
19. Effective means, such as expanded metal or wire with a mesh not exceeding 1/2-inch embedded in the walls and floors at their junctions and extending vertically and horizontally an adequate distance, or other effective means, are provided to exclude the entrance of rats and other rodents into rooms.

WATER SUPPLY, PLUMBING, DRAINAGE, AND REFRIGERATION

1. The potable water supply is obtained from (indicate source of supply, e.g. wells, City of _____, etc.), and is effectively protected from pollution.
2. An ample supply of hot water at adequate temperature and under suitable pressure and properly distributed throughout the plant is provided. Hose connections for supplying hot and cold water are provided in the various workrooms at the approximate locations shown on the drawings.
3. Each lavatory (hand-washing basin) is supplied with hot and cold water delivered through a combination mixing faucet with outlet about 12 inches above the rim of the bowl, liquid soap and an adequate supply of sanitary towels in suitable dispensers, and a suitable receptacle for used towels. Lavatories are pedal operated.
4. Sanitary drinking fountains are provided in the processing departments and in the dressing rooms. If placed adjoining a lavatory, they are located high enough to avoid splash from the lavatory.
5. All equipment wasting water is installed so that waste water is delivered into the drainage system without flowing over the floor.

6. Effective means are taken to prevent back-siphonage of liquids into the potable water supply or steam lines. Back-siphonage of liquids into potable water supply is prevented by placing water lines to equipment, such as cooking or soaking vats and the like, higher than the highest level reached by liquids in the vats, etc.
7. The sewage from the plant is disposed of by discharging it into the city sewer system (furnish description of facilities if other method of disposal is employed).
8. Toilet soil lines are separate from house drainage lines to a point outside of the building and by-pass the grease catch basin. (If there is one at the plant.)
9. Floor drainage lines inside buildings are of metal and have an inside diameter of at least 4 inches, properly vented to the outside air to a point above the roof, and are equipped with deep seal traps. All floor drains and vent lines are provided with facilities to exclude rodents.
10. The grease catch basin is constructed so that it can be completely drained of its contents for cleaning daily and is without cover for ready inspection. Grease skimmed from the basin is placed in water-tight containers and promptly removed from the plant. A hose connection for supplying hot water for cleaning the basin and adjacent area is provided in a convenient location. The area around the basin is paved with concrete and provided with drainage facilities. The construction of the basin is shown on detail drawing.
11. Heat to dispel steam and vapor is provided in unrefrigerated work-rooms. Employees' welfare facilities and the inspector's office are also provided with adequate heat in cold weather.
12. Refrigerated rooms are maintained at a temperature not higher than 50°F.
13. The coolers are refrigerated by means of (give types and locations of refrigeration units). Overhead refrigerating units have insulated drip pans beneath them, properly connected to the drainage system. Floor-type refrigerating units are placed within curbed and separately drained area unless located adjacent to floor drains. Wall refrigerating coils have drip gutters of impervious material, such as concrete, beneath them, properly connected to the drainage system.

EQUIPMENT

1. All stationary equipment not readily movable is placed not less than 12 inches from floors, walls, and ceilings and other stationary equipment to facilitate ready cleaning of outer surfaces.
2. All equipment, except cutting boards of boning tables and the like, is of rust-resistant metal construction and so constructed that it can be readily kept clean.

3. Chutes for the transfer of product are so constructed that they can be readily cleaned (long chutes, due to difficulty of cleaning, should be avoided). Chutes are round in shape or otherwise have well rounded corners.
4. Cooking vats and like equipment are provided with overflow pipes at least 2 inches in diameter having open-end cleanout tees at their upper ends and are connected to the drainage system by means of interrupted drains. Valves on drainage lines leading from such equipment are located adjacent point where line is connected to equipment.
5. A suitable room or space and facilities for washing beef hooks, trolleys, etc., are provided in a convenient location as shown and an exhaust fan is installed in an outside wall for dispelling steam.
6. The cages or trees used for smoked meats and sausage are so designed that there is a clearance of at least 12 inches between the product and the floor of the smokehouses and hanging rooms. The type and size of this equipment is illustrated by detail drawing on Sheet (insert correct sheet number of submitted drawings).
7. Smoke-making equipment and ducts are so located that all outer surfaces can be readily cleaned.
8. Color changing tags are provided and attached to retort baskets to identify product that has been retorted.
9. A suitable room or separately drained area is provided for washing hand trucks, boxes, trays, demountable parts of sausage stuffing equipment, etc. Two suitable compartments with entrance rails are provided for washing smokehouse cages and trees. The first compartment is used for washing cages and trees with a detergent solution and the second for rinsing this equipment with clean water to remove all detergent solution. The washing compartment has a suitable exhaust duct extending to a point outside of the building.
10. An incubation room for incubating samples of fully processed canned meat product is provided as shown on the drawings. The room is of adequate size for holding not less than one percent of fully processed canned product from each run of each retort for at least ten days. The temperature in the room is maintained by thermostatic control at approximately 98°F. and the room provided with a recording thermometer located on an outside wall so as to be visible without entering the room. The shelves are made of expanded metal and are removable. The sensitive elements of the thermostat and recording thermometer are below the bottom shelf. The floor in the room is pitched to a floor drain equipped with a removable screw plug. The door of the room is equipped for locking with a M. I. D. padlock or seal.
11. A suitable rust-resistant metal table with top about 3' x 5' is provided in an unobstructed space in a cooler for holding returned product for inspection.

12. Each employee is provided with a metal locker at least 15" x 18" x 60", having a sloping top and with bottom elevated on legs about 16 inches long. Removable plastic or wood seats about 12 inches wide are provided in front of and below the doors of the lockers and are attached to the framework of lockers or (a single plastic or wooden seat about 12 inches wide securely attached to the floor by a minimum number of pipe leg supports is located about 2' 6" in front of the lockers). The dressing room will be used by not more than (give number and sex of employees).
13. Clothing lockers have effective means for ventilation, such as doors having louvered openings of adequate size or doors constructed of expanded metal or heavy wire mesh.
14. The inspector's office is provided with suitable furniture, including a desk and chairs, a metal clothing locker (of at least the size provided for employees) for each inspector, a metal cabinet equipped for locking for the storage of supplies and lavatory and toilet facilities.
15. A suitable room or space for the storage of supplies, such as wrapping paper, cartons, and containers, is provided in a convenient location as shown. All supplies are placed on racks 12 inches above the floor.

OPERATIONS

1. Pieces of meat are washed individually in running water and not in batches.
2. Condemned and inedible material is transferred to the inedible products room and placed in suitable water-tight metal containers and removed daily, or more often if deemed necessary by the inspector in charge, to an outside rendering plant for disposal. Suitable facilities for washing the containers used for such materials are provided in the room.
3. Empty cans are washed in an inverted position with water having a temperature of at least 180°F. immediately before filling.
4. Retorts are charged by (describe means). Retorts drain into curbed and drained areas or pits or are connected to the drainage system by interrupted drains.
5. Boning, cutting, and similar operations are conducted in departments having a temperature of approximately 50°F.
6. Vegetables are stored in bulk in a suitable separate room and are handled so as to avoid dissemination of dust. Suitable facilities for the preliminary preparation of vegetables for use in product are provided in a location separate from the processing area.

Vegetables such as celery and potatoes are thoroughly washed before being cut up as by dicing.

7. Sawdust is conveyed to and ashes removed from smokehouses in metal containers having tight fitting lids (when necessary to go through processing departments).

GENERAL

1. Each workroom and compartment is provided with artificial lighting of good quality having an intensity of at least 20 foot candles for general illumination and at least 50 foot candles at places where inspections are performed and where plant operations require establishment employees to properly prepare products of any character to meet the inspection requirements.
2. Outer clothing of employees, press cloths, etc., are laundered at (the plant laundry) (an outside laundry). Use appropriate statement.
3. Roadways on the premises adjoining the plant are hard surfaced and have a binder of asphalt, tar, or cement and are properly drained.
4. Wall mounted cabinets, electrical control panels, and the like have a clear space of at least 1 inch between the mounted units and the wall.
5. Artificial light fixtures in rooms where exposed meat is handled or processed are provided with a protective shield of suitable non-shattering material such as plexiglas so as to preclude contamination of product with broken glass.

